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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,044	09/22/2001	Gerald K. Foshage	AFSI-0136	4733

7590 09/25/2002

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EXAMINER

AGUIRRECHEA, JAYDI A

ART UNIT PAPER NUMBER

2834

DATE MAILED: 09/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,044

Applicant(s)

FOSHAGE, GERALD K.

Examiner

Jaydi A. Aguirrechea

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki et al. (US4717315) in view of Tecza et al (US 5521448).

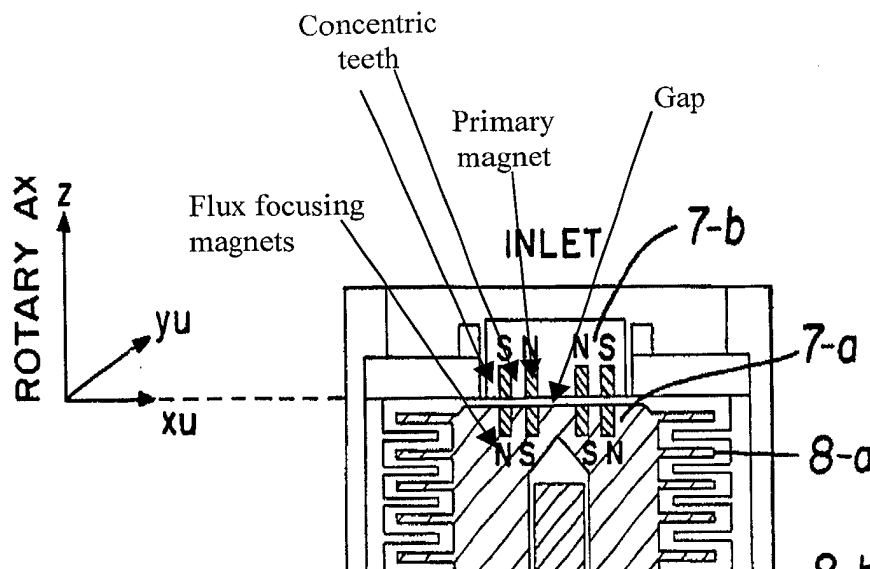
Miki et al. teach the use of a magnetic bearing comprising:

a rotor disk (10a), rotating about an axis of rotation, having a first plurality of concentric teeth (7a) extending from a surface thereof,

a stator disk (10b) having a second plurality of concentric teeth (7b) extending from a surface thereof,

the second plurality of concentric teeth being spaced apart from the first plurality of concentric teeth by a gap (Figure 2) that permits a primary magnetic flux to flow between the first and the second plurality of concentric teeth substantially in a first direction;

a primary magnet (the inner magnet) magnetically coupled to at least one of the rotor disk and the stator disk and being adapted to provide the primary magnetic flux;



and a flux focusing magnet (outer magnet), having a square cross section, fixedly coupled to at least one of the surface of the rotor disk and the surface of the stator disk and producing a secondary magnetic flux that flows substantially in a second direction substantially opposite the first direction;

a rotor disk adapted to rotate about a predetermined axis (See figure 2) and having a first and a second circumferentially extending raised portion projecting from a surface thereof,

a stator disk, having a major surface that faces the major surface of the rotor disk, axially spaced from the rotor disk and positioned around the predetermined axis, the stator disk having a third and a fourth circumferentially extend in a raised portion projecting from a surface thereof,

a permanent magnet magnetically coupled to at least one of the rotor disk and the stator disk and providing a primary magnetic flux;

a first plurality of flux focusing magnets each being positioned between adjacent ones of the first plurality of raised portions and each being polarized in a direction substantially opposite the first direction; and

a second plurality of flux focusing magnets each being positioned between adjacent ones of the second plurality of raised portions and each being polarized in the direction substantially opposite the first direction.

However, it fails to disclose the ring shaped magnets.

Tecza et al. teach concentric magnetic rings generate sufficient magnetic flux for passive magnetic bearings.

It would have been obvious to one skilled in the art at the time the invention was made to use the ring shaped magnets disclosed by Tecza et al. on the passive magnetic bearing disclosed by Miki et al. for the purpose of generating sufficient magnetic flux.

Regarding claim 7, Miki et al disclose the claimed invention except for the rotor disk having only four of the concentric teeth extending from the surface thereof and the stator disk having only four of the concentric teeth extending from the surface thereof. It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the concentric teeth, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 8 and 14, Miki et al discloses the claimed invention except for the magnets formed from neodymium iron boron or a samarium cobalt. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have magnets formed from neodymium iron boron or a samarium cobalt, since the selection of known materials for a known purpose is within the skill of the art.

Regarding claims 9 and 15, Miki et al. disclose the claimed invention except for the method used to bond the flux focusing magnet to the rotor or the stator. It is inherent in the reference that the method used to bond the magnets to the rotor and/or stator was gluing, adhering, by friction or by magnetic bonding.


Conclusion

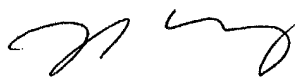
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 703-305-2277. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


jaa
September 20, 2002


NESTOR RAMIREZ
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